

REPUBLIC ENVIRONMENTAL SYSTEMS (PENNSYLVANIA), INC.
RES (PA)
2869 SANDSTONE DRIVE
HATFIELD, PA 19440

EPA ID #: PAD085690592

REVISED RCRA PART B APPLICATION
SECTION 4
WASTE CHARACTERISTICS
AND
WASTE ANALYSIS PLAN

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4-17

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WASTE CHARACTERISTICS AND WASTE ANALYSIS PLAN

4.1

INTRODUCTION

This Waste Analysis Plan (WAP) has been prepared in accordance with Pennsylvania Solid Waste Regulations, 25 PA. Code § 264.13(c). A copy of this Plan will be retained at the facility site and used as company policy for the acceptance and management of hazardous and residual waste.

The purpose of the Waste Analysis Plan is to document the necessary procedures undertaken for all wastes which enter the facility for storage or treatment. The WAP delineates the following:

Pre-Acceptance Procedures - To determine the acceptability of the waste pursuant to the facility permit conditions and waste management capabilities prior to receipt of the waste.

Receiving Procedures - To fingerprint and verify that incoming waste shipments match accompanying manifest and pre-acceptance criteria under which the waste was accepted.

Waste Management Procedures - To assure proper and safe methods of storage, treatment and management of wastes at the facility.

Lab Methodology and QA/QC - To assure that proper methods of analysis, personnel training, analytical equipment and quality assurance programs are being maintained.

The WAP tracks a waste, starting with the examination of a sample and profile information provided by the generator through management at the facility and finally, disposal from the facility.

4.2 FACILITY DESCRIPTION

Republic Environmental Systems (PA), Inc. is a state-of-the-art waste treatment facility. The facility provides waste management which stresses waste minimization and environmentally sound methods of waste treatment.

Republic accepts hazardous and residual waste received from offsite generators and TSD facilities. Residual wastes are accepted at the facility in both liquid, solid and semi-solid form in drum and bulk containers and vehicles. Residual waste accepted shall be managed as a hazardous waste in accordance with sections 2,3 and 4 of this permit. Residual wastes are managed in permitted hazardous waste units and will be handled following the same protocols as hazardous waste while in that unit. The wastes accepted include the following:

Aqueous wastes which are amenable to treatment* by chemical, physical and biological methods. These wastes are received in bulk tankers and/or stored in tanks.

***NOTE:** Wastes which are not amenable to treatment at this facility are stored and/or consolidated into tanks and sent offsite to alternate approved TSD facilities.

Oils, petroleum products and organic solvents suitable for recycling or incineration. These wastes are accepted in drums and bulk tankers and sent to alternate approved offsite TSD facilities for treatment, disposal and/or reuse. Compatible liquids in drums and bulk may be consolidated into on-site storage tanks for bulk shipment to offsite disposal or recycling facility.

Drums or containers of aqueous wastes which are amenable to chemical, physical, and biological treatment. The wastes are reduced to criteria specified for bulk treatment (through blending and consolidation) and are transferred to reactor vessels or bulk storage tanks for treatment or are shipped to an offsite TSD facility.

Drums or containers of solid waste amenable to treatment or transfer for ultimate land disposal. Sludges, soils, solids and debris are accepted and consolidated into bulk form in the waste pile or staged in a bulk container (roll-off, dump trailer). Solids amenable to treatment via chemical fixation or stabilization are treated in the containment building. Solids not requiring treatment and debris, are consolidated into bulk form and shipped off site to the designated TSD facility.

Drums or containers for storage and consolidation/repackaging only and reshipment to another TSD facility. These are wastes which are not amenable to treatment at this facility and are accepted for storage provided the waste category is one of the listed types in the revised Part A Application. Compatible materials may be consolidated and repackaged into bulk form prior to shipment off site to a TSD facility.

Solids, sludges and soils for storage and chemical fixation, stabilization and transfer are stored and/or treated in an enclosed Containment Building. The solids are managed as indoor waste piles. The solids accepted comprise the listed types covered in the revised Part A Application. All solid wastes are ultimately transported to a permitted landfill or incinerator for ultimate disposal in compliance with the requirements of the receiving facility and state.

Contaminated soils, debris and spill cleanup material for treatment and/or storage. These solid wastes are consolidated with other compatible solid waste and are managed as indoor waste piles as stated above and ultimately shipped off site to a permitted TSD facility.

Lab packs under the following conditions:

- a. Wastes which are amenable to physical, chemical and biological treatment are placed in the appropriate drum storage area when

received. These wastes are consolidated after unpacking and compatible materials are emptied into a clean empty container. The consolidated material is transferred to a tank for treatment or off-site disposal.

b. Wastes for storage and subsequent reshipment to an alternate TSD facility are properly labeled with this information and placed in an appropriate section of the drum storage area.

c. Drums containing a combination of waste materials are unpacked and repacked into DOT-approved drums in accordance with the specifications of the offsite TSD facility. Compatible liquids and solids may be consolidated together into a bulk drum prior to final treatment or disposal.

All storage and treatment processes are conducted inside an enclosed building. The treatment operations are broken down into four waste management categories:

- Treatment in tank
- Treatment in waste pile (containment building)
- Biological Treatment
- Drum & Container Management

Bulk liquid wastes are stored in closed tanks. Containers are stored in a segregated area on a concrete floor with designated aisle spaces. Sludges and solids are stored in the enclosed Containment Building in waste piles on a concrete floor.

4.2.I TREATMENT IN TANKS

The treatment processes are on a batch basis which allows Republic to exert control over treatment efficiency and effectiveness. Treatment of liquid waste is carried out in closed reactors. The reactors are equipped with agitators to ensure a uniform mixture during the treatment process. Air quality is controlled by either a two-stage or single-stage wet scrubber which neutralizes or oxidizes fumes and vapors through a negative pressure linkage to each reactor. Reagent treatment chemicals are introduced under controlled measures into a reactor to produce a precipitate, oxidize or reduce a compound, or adsorb traces of organic compounds. The by-products of each liquid treatment process is an aqueous phase and a sludge phase. The batch is filtered by pre-coated rotary drum vacuum filters. The filtrate is discharged to the municipal sewer and the filter cake is conveyed to the containment building for, fixation, solidification and/or for offsite disposal.

There are four specific waste management operations procedures for bulk liquids. Those categories are as follows:

- a) Treatment of non-hazardous and characteristically hazardous waste.
- b) Treatment of characteristic and listed hazardous waste.
- c) Treatment of oils and petroleum products and by-products.
- d) Biological treatment of wastewater

Republic has separated the aqueous waste water treatment operations into two distinct processes; a hazardous and non-hazardous process. Each process is distinct and completely separate from the other. There are two different and specific standard operating procedures for each process which specify waste streams, procedures and equipment to be utilized. The end result is the generation and segregation of two (2) sludge by-products, hazardous and non-hazardous (residual). The two processes are described in detail below.

4.2.1.1 TREATMENT OF NON-HAZARDOUS & CERTAIN CHARACTERISTIC WASTE

The 'residual' treatment operations involve the chemical and physical treatment of non-hazardous and characteristically hazardous waste. All equipment (tanks, pipes, pumps, filters, etc.) for residual processing is specifically identified and color coded green. The entire operation is a completely segregated system.

The waste types acceptable for the non-hazardous process are the following characteristic waste types:

| | | |
|------|---------|--|
| | D001 | Ignitable with a flash point >100°F |
| | D002 | Corrosive |
| | D003 | Reactive cyanide <1%, No limit on sulfide due to its use in precipitating heavy metals |
| K062 | | Spent pickle liquor from steel finishing operations (lime neutralized) |
| | D004 | Arsenic |
| | D005 | Barium |
| | D006 | Cadmium |
| | D007 | Chrome |
| | D008 | Lead |
| | D009 | Mercury |
| | D010 | Selenium |
| | D011 | Silver |
| D018 | Benzene | |
| | D019 | Carbon Tetrachloride |
| | D021 | Chlorobenzene |
| | D022 | Chloroform |
| | D023 | O-Cresol |
| | D024 | M-Cresol |
| | D025 | P-Cresol |
| | D026 | Cresols |
| | D027 | 1,4 Dichlorobenzene |
| | D028 | 1,2 Dichloroethane |
| | D029 | 1,1 Dichloroethylene |
| | D030 | 2,4 Dinitrotoluene |
| | D032 | Hexachlorobenzene |

| | |
|------|------------------------|
| D033 | Hexachlorobutadiene |
| D034 | Hexachloroethane |
| D035 | Methyl Ethyl Ketone |
| D036 | Nitrobenzene |
| D038 | Pyridine |
| D039 | Tetrachloroethylene |
| D040 | Trichloroethylene |
| D041 | 2,4,5 Trichlorophenol |
| D042 | 2,4, 6 Trichlorophenol |
| D043 | Vinyl Chloride |

It has been demonstrated that many of these characteristic waste types have properties that can be effectively used in the treatment of other wastes. This process is an important step to minimize the generation of hazardous wastes through recycling/reuse. Examples:

Heavy metal and iron salts are excellent coagulants

Acids are used to neutralize caustics

Caustics are used to neutralize acids

Sulfides are used to precipitate heavy metals

Bleaches and other oxidizers are used to oxidize organics, cyanides and odorous wastes.

The specific equipment used in the 'residual' process is as follows:

| <u>STORAGE TANKS</u> | <u>REACTOR VESSELS</u> | <u>FILTERS</u> |
|----------------------|------------------------|------------------|
| T-1 | R-1 | Vacuum Filter 1 |
| T-2 | R-2 | Vacuum Filter 3* |
| T-5 | R-3 | |
| T-6 | R-4 | |
| T-9 | R-8 | |
| T-10 | | |
| T-11 | | |
| ST-1 | | |
| ST-2 | | |
| ST-5 | | |
| ST-6 | | |
| ET-1 | | |
| ET-2 | | |
| EQ | | |

***Note:** VF-3 is a swing filter and may be converted to either process. Prior to use in the non-hazardous process it will be properly rinsed and decontaminated and certified clean.

All pumps and pipes used are color coded green and are part of the segregated system.

The sludge generated from the 'residual' treatment operation will be stored and tested for EPA hazardous characteristics, corrosivity, reactivity, ignitability, and TCLP heavy metals prior to being sent offsite for disposal as residual waste. This is to monitor and ensure treatment effectiveness.

Residues generated from the treatment of Characteristic hazardous wastes D018 through D043 will be analyzed for the corresponding TC organic compound prior to being sent offsite for disposal as residual waste.

4.2.1.2 TREATMENT OF CHARACTERISTIC & LISTED HAZARDOUS WASTE

The 'hazardous' treatment operations involves the chemical and physical treatment of certain characteristic waste not meeting the parameters for residual treatment process as well as listed hazardous waste.

All equipment (tanks, pipes, pumps, filters, etc.) for 'hazardous' processing is specifically identified as such and color coded orange. The entire hazardous operation is a completely segregated system.

The waste types acceptable for the hazardous process are all those EPA waste numbers specified in the Part A Application and the Waste Characteristics Section (i.e., D, F, K, U and P numbers).

The specific limitations for acceptance are as follows:

Flash point must be $>100^{\circ}\text{F}$

Reactive cyanide must be less than 1% for bulk liquid processing. No limit is set on reactive sulfide due to its effective re-use in precipitating heavy metals. However, sulfides will be evaluated for odor generation to assure compliance with the air quality permit.

Mercury greater than 100 ppm in bulk liquid treatment will be evaluated on a case by case basis to demonstrate capability to remove mercury to less than 0.20 ppm in filtrate.

Those U and P listed commercial chemical products treated in bulk will be aqueous in nature and generated from the result of contaminated waste and wash waters, spill cleanups, and well pumpings. There will be no free organic layer present and the dissolved contaminants present will be demonstrated to be destroyed or removed by a treatability study and/or biosystem treatment. The resultant filtrate will meet the requirements for POTW permit discharge or alternate TSDF requirements.

Dissolved organic compounds present are evaluated for treatment using one or all of the following methods:

- chemical oxidation
- activated carbon adsorption
- biological treatment

The specific equipment used in the hazardous treatment process is as follows:

Storage Tanks

Reactor Vessels

Filters

| | | |
|------------------------|----------------------|------------------|
| T-3 | R-5 | Vacuum Filter2 |
| T-4 | R-6 | Vacuum Filter 3* |
| T-7 | R-7 | |
| T-8 | Biosystem Reactor 1 | |
| ST-3 | Biosystem Reactor 2 | |
| ST-4 | Drum Processing Tank | |
| Effluent Decant Tank | | |
| Emergency Storage Tank | | |
| Equalization Tank | | |
| Effluent Tank 1 | | |
| Effluent Tank 2 | | |

The sludge generated from the hazardous treatment operation will be stored in waste piles in the segregated section of the containment building for hazardous materials. This waste will be tested to the requirements of the offsite TSDF and the applicable Land Disposal Restriction regulations specified 40 CFR Part 268. Waste sludge generated from the treatment of listed waste will be handled, managed and shipped off site as the corresponding listed hazardous waste. Prior to the management of a characteristic waste in this system, all tanks, lines and pumps shall be properly decontaminated and certified clean (refer to figure 4-8 for decontamination form to be completed). Waste generated from the treatment of strictly characteristic waste will be stabilized and analyzed for the appropriate hazardous characteristics. Sludges determined to exhibit no hazardous characteristics will be disposed of as residual at an off-site Subtitle D landfill.

4.2.1.3 TREATMENT OF OILS & PETROLEUM PRODUCTS & BY-PRODUCTS

This treatment operation involves the treatment of hazardous and residual petroleum based non-aqueous waste emulsions, and petroleum and water mixtures destined for recycling and reuse. The waste types are primarily used and un-used oil and petroleum products which have a recoverable fuel value. The primary treatment process is blending and phase separation. Various oily wastes and petroleum by-products are mixed in the designated oil storage and process tanks. Oil and water phases are allowed to gravity separate to recover the recyclable oil fraction. Oil and petroleum wastes may be blended together to meet the off-site TSDF specifications. Polymers and demulsifiers may be added to enhance the phase separation process. The waste types acceptable for this process include:

| | |
|----------------|--------------------|
| D001 Ignitable | Flash point >100°F |
| D004 Arsenic | Flash point >100°F |
| D005 Barium | Flash point >100°F |
| D006 Cadmium | Flash point >100°F |
| D007 Chrome | Flash point >100°F |
| D008 Lead | Flash point >100°F |

| | |
|------------------------------------|-----------------------------|
| D009 Mercury | Flash point >100°F |
| D010 Selenium | Flash point >100°F |
| | D011 Silver |
| | Flash point >100°F |
| D018 Benzene | Flash point >100°F |
| | D019 Carbon Tetrachloride |
| | Flash point >100°F |
| D021 Chlorobenzene | Flash point >100°F |
| | D022 Chloroform |
| | Flash point >100°F |
| D023 O-Cresol | Flash point >100°F |
| D024 M-Cresol | Flash point >100°F |
| D025 P-Cresol | Flash point >100°F |
| D026 Cresols | Flash point >100°F |
| D027 1,4 Dichlorobenzene | Flash point >100°F |
| | D028 1,2 Dichloroethane |
| | Flash point >100°F |
| | D029 1,1 Dichloroethylene |
| | Flash point >100°F |
| | D030 2,4 Dinitrotoluene |
| | Flash point >100°F |
| | D032 Hexachlorobenzene |
| | Flash point >100°F |
| D033 Hexachlorobutadiene | Flash point >100°F |
| | D034 Hexachloroethane |
| | Flash point >100°F |
| | D035 Methyl Ethyl Ketone |
| | Flash point >100°F |
| | D036 Nitrobenzene |
| | Flash point >100°F |
| D038 Pyridine | Flash point >100°F |
| | D039 Tetrachloroethylene |
| | Flash point >100°F |
| | D040 Trichloroethylene |
| | Flash point >100°F |
| | D041 2,4,5 Trichlorophenol |
| | Flash point >100°F |
| | D042 2,4, 6 Trichlorophenol |
| | Flash point >100°F |
| D043 Vinyl Chloride | Flash point >100°F |
| | F037 Pet. Ref-Primary |
| | Sludge Flash Point >100°F |
| | F038 Pet. Ref-Secondary |
| | Sludge Flash Point >100°F |
| PA01 Oil Containing Halogens >0.1% | |

K048 Petroleum Ref DAF

Flash point >100°F

K049 Pet.Oil Emul Solids

Flash point >100°F

K050 Pet.Heat Exch Sludge

Flash point >100°F

K051 Pet.API Sludge

Flash point >100°F

K052 Pet.Tank Bottoms (Pb)

Flash point >100°F

The specific equipment used in this process includes:

Tanks

OT-1

OT-2

S-2

Each load of product generated from this process will be analyzed to meet the specifications of the offsite facility.

4.2.2 TREATMENT IN THE WASTE PILE

Republic maintains two waste pile areas in the enclosed containment building; a hazardous and a non-hazardous (residual) unit. Each area is segregated. Solid waste stored in the waste piles is received from three areas:

1. Dewatered sludge from vacuum filters from wastewater treatment operation;
2. Hazardous solids and residual solid waste, as specified in table 4-3, received in containers; and
3. Hazardous solids and residual solid waste, as specified in table 4-3, received directly from generators in bulk form, such as dump trucks or rollofs.

The waste pile areas will be managed in accordance with EPA and Pennsylvania Solid Waste Regulations for containment buildings managing indoor waste piles.

All solid waste received from offsite generators will be tested for compatibility with existing pile prior to being added to the pile.

No free liquids will be added to the pile. All free liquids will be decanted and/or chemically fixated prior to being added to the pile.

Ignitable (D001) and reactive (D003) waste will not be stored or treated in the waste pile.

The waste types acceptable for treatment and/or storage in the waste pile are all those EPA waste numbers specified in the Part A Application and the Waste Characteristics Section, and residual wastes as specified in Table 4-3.

The specific limitations for acceptance are as follows:

Waste destined for land disposal must meet the requirements of the offsite TSDF as well as the land disposal restrictions specified in 40 CFR Part 268.

U and P listed commercial chemical products will be generated from the result of spill materials treatment sludges and contaminated soils and debris. The contaminants present will be low level concentrations and will be demonstrated to be compatible with waste pile and meet the requirements for offsite disposal. Virgin, commercial chemical products will not be managed in the waste pile. Residual wastes shall conform to the categories as specified for waste pile storage and treatment in Table 4-3 and shall contain <25% debris by volume.

The treatment in the waste pile, both hazardous and residual, will entail the addition of kiln dust, fly ash, cat fines, lime or cement dust for the purpose of chemical fixation and stabilization of solids prior to land disposal. No liquids will be treated in the waste pile. Wastes containing liquids will be treated prior to addition to the waste pile by one of three methods:

Decant free liquid phase and transfer to liquid processing portion of plant.

Add kiln dust, cat fines, lime and/or cement dust to solids containing free liquids in bulk vehicles or containers. Material to be mixed, as necessary, to ensure uniform mixture and proper and complete treatment, to meet the paint filter test.

Sludges over twenty percent (20%) solids and filter cake (from Republic's aqueous treatment process and outside sources) are fixated on the waste pile floor to meet alternate disposal facility parameters. These solids are then mixed in the proper existing waste pile.

Prior to any treatment of solid waste in the containment building, a treatability study will be performed and demonstrated to be acceptable. The chemical fixation of free liquids will occur in portable tanks or containers and will comply with all air quality permits and requirements.

Upon completion of chemical fixation treatment, the solid waste as specified in the attached tables 4.2 and 4.3 will become commingled with existing waste pile as previously described.

4.2.3

BIOLOGICAL TREATMENT

Description of Operation

The biological treatment system will "polish" the vacuum filter effluent and decant tank effluent prior to discharge to the municipal sewer. The purpose is to reduce the soluble BOD5, total nitrogen and concentrations of organic compounds in the wastewater.

The specific equipment used in this process includes:

BIO-1

BIO-2

EQ

ET-2

The biological treatment units as shown on Drawings 3 and 10 comprises an equalization tank and two (2), twelve (12) feet diameter by twenty-five (25) feet high tanks. They will be fed from the effluent holding or other designated tanks on a continuous recycle basis at a high flow rate. A portion of the biological treated effluent will be continuously discharged to the treated effluent tanks.

Technology

The biotreatment process is a combination of a biomass filter and an expanded fluidized sand bed. The process consists of passing liquid wastewater upflow through a bed of sand at sufficient velocity to fluidize the sand.

A large volume of surface area is created (over 1,000sf/cf) by fluidization of the sand bed. Each sand grain is covered with an active bio-mass which consumes the waste. Intimate contact of the entire media surface with the wastewater occurs. The process combines a long biological solids retention time in a short hydraulic retention time reactor.

Each upflow pass of wastewater through the tank reduces the Biological Oxygen Demand, 5 Day (BOD5) and nitrogen concentration in the wastewater exiting the unit. By controlling the number of recycles, feed concentration and effluent discharge rate, an equilibrium condition is achieved in that the feed rate from vacuum filter effluent holding tank equals the discharge rate to the sewer.

The process is supplemented by temperature control of the wastewater, pH control and nutrient additives for optimization of the anaerobic biodegradation.

Capacity

Each of the treatment tanks is designed to handle 50,000 gallons per day of high strength BOD5 and nitrogen wastewater. The effluent quality of the treated wastewater discharged to the effluent holding tanks can be varied to meet the requirements of the Hatfield POTW criteria.

4.3

WASTE ANALYSIS PLAN

4.3.1

IDENTIFICATION OF WASTES TO BE MANAGED

The procedures utilized to identify and characterize every waste both hazardous and residual, chemically and physically treated or stored at the facility are described in this section of the Waste Analysis Plan.

The generator of a waste stream is required to provide a representative sample along with technical information on the waste, which is recorded on the Waste Characterization Report or equivalent form, Figure 4-1. The WAP describes the analytical parameters to be performed on the sample by Republic technical personnel. A laboratory code number is assigned to each waste stream sample (for tracking and data management purposes) which is generator and waste process type specific. After a generator's sample has been analyzed and the waste profile information is examined, the appropriate EPA hazardous waste number(s), if applicable, are recorded against the sample and lab code number. The analytical and profile information on each waste stream is maintained at the facility.

Each sample is reviewed for acceptability for treatment or storage at the facility. Wastes which are amenable to chemical or physical treatment are subject to a bench (beaker size) scale treatability analysis to determine the specific treatment method. Wastes which are accepted for storage only are analyzed according to the WAP, although the procedures are modified to more closely correspond to the specific handling and disposal method for that waste.

Every load of incoming waste is identified by Republic's Bill of Lading and the corresponding lab code number. All hazardous waste is accompanied by a Pennsylvania Hazardous Waste Manifest. All residual waste is accompanied by a Republic Bill of Lading document. The Republic Bill of Lading and the Hazardous Waste Manifest must be signed by a trained, authorized representative of the company. The number printed on the form, as well as the lab code number, identifies this particular incoming waste shipment as it enters the facility. Each batch of waste accepted is tracked throughout the entire treatment process.

Each and every waste shipment is sampled and analyzed prior to acceptance. Once a representative sample has been obtained, the plant chemical processor consults the Master Manual (computer data base) of established treatment procedures as a reference guide for managing a particular waste. Each Treatment Procedure Sheet (T.P.S.) contains the following information:

- Generator name and corresponding Lab Code
- Waste identification
- Hazardous characteristics and EPA waste numbers
- Physical and chemical fingerprint from initial sample
- Proposed handling and treatment methods from bench scale analysis.
- Safety instructions.

The laboratory technician checks the parameters of each incoming waste against the initial sample fingerprint analysis to determine if the waste is within specifications.

Wastes shipped to the facility for storage only and subsequent offsite disposal to another TSD facility will be examined according to the Waste Analysis Plan. All shipments of waste will be sampled to confirm the contents match the representative information provided by the generator, as well as the accompanying manifest or shipping document. Samples may not be required where sampling the waste is not applicable or incurs unsafe conditions (i.e., asbestos, PCB(s) capacitors, mercury, lab packs, etc.).

4.3.2 PRE-ACCEPTANCE PROCEDURES

Republic utilizes specific procedures to determine the acceptability of each new specific waste (both hazardous and residual) for receipt at the facility. These procedures dictate the information a generator must provide to enable Republic to determine the acceptability of the waste and prepare the waste management regime to be employed. Thus, pre-acceptance control enables Republic to accept or reject a new waste based on permit conditions, analysis, compatibility with other wastes stored or treated and facility treatment processes. For each new waste stream that is a candidate for delivery to the facility, the following procedures are implemented:

The generator must provide a detailed chemical and physical analysis of the waste and complete description of the process generating the waste. This information will be submitted on a Waste Characterization Report (Figure 4-1) or equivalent, which has been certified by the generator. The information from the generator must be complete enough to enable Republic to store or treat the waste in compliance with all criteria of the storage and treatment methods utilized by the facility, according to the permit.

At a minimum this will include a hazardous waste determination to identify whether or not the waste is RCRA hazardous, and a determination as to the applicability of the land disposal restrictions. If the generator does not provide this information, Republic conducts the required tests.

The generator will provide a representative sample of his waste that has been procured by an approved sampling method. Republic verifies the generator's certified information upon evaluation of the generator's representative sample in the facility laboratory. Depending on the characteristics of the generator's waste, the verification analysis may include the parameters specified in Figure 4.2 for hazardous waste or 4-6 for residual waste, if a specific measurement is significant with respect to management of the waste. If the analysis is supplied by the generator or third party laboratory, Republic will not duplicate the analysis.

For emergencies and specific situations where a sample cannot be procured and submitted with the WCR, the following procedure will be implemented:

The waste shipment in question will be scheduled and upon receipt staged at RES (PA).

A sample will be procured from the actual load upon receipt.

The truck will remain in transit until the appropriate pre-acceptance analysis is performed.

Upon completion of the analysis the manifest will be signed, a lab code will be generated and the waste will be formally approved for acceptance.

The pre-acceptance procedure for lab packs will vary from the above prescribed protocol based on the nature of a lab pack. The procedure will be as follows:

A project summary form will be submitted for each lab pack project, along with a chemical inventory.

The individual packing slips will be reviewed for the technical details required for approval and acceptance. Each packing slip will contain the following information:

- 1) List of actual chemicals (no trade names) packed including respective weight or volumes.
- 2) Corresponding applicable EPA waste numbers for each chemical.
- 3) Complete DOT shipping description.
- 4) Generator name, address and EPA ID number.

Samples will not be required for individually packed containers. Samples will only be procured and analyzed upon bulking and consolidation of lab pack items.

Republic will, at a minimum, perform eight (8) basic screening procedures on the generator's initial sample submitted for treatment, storage or disposal purposes. This will provide a general characterization of the waste and verify the information provided by the generator. The parameters, methods and associated rationale of the basic screening procedures are:

Physical Description - to determine the general characteristics and nature of the waste which would affect handling and processing of the material (liquid, solid, semi-solid, phases, etc.)
Method Used: In-house method, visual inspection.

pH Screen - to indicate the corrosive nature of the waste. Method Used: SW-846, 9040, pH meter.

Water Mix - to determine whether the waste has a potential to react vigorously with water to form gases or generate significant heat. Method Used: In-house method, addition of water to sample aliquot and observation for reaction, temperature change, etc.

Ignitable Screen - to determine whether or not the waste is RCRA ignitable or has fire-producing potential. Method Used: SW-846, 1010 Pensky Martin or Seta Flashpoint Tester.

Reactive Cyanide Screen - to determine whether the waste will liberate hydrogen cyanide when subjected to acidic conditions. Method Used: In-house method using Draeger Monotox to measure hydrogen cyanide. Positive reading is followed-up with SW-846 Chapter 7.3.

Reactive Sulfide Screen - to determine whether the waste will liberate hydrogen sulfide when subjected to acidic conditions. Method Used: In-house method using Draeger Monotox to measure hydrogen sulfide. Positive reading is follow-up with SW-846 Chapter 7.3.

Odor Screen - to subjectively evaluate the odor and fume emission potential of the waste at ambient temperatures and pressures and during the treatment processes. Method Used: In-house, odor profilel.

Compatibility Screen - to determine if the waste can be mixed or stored with other wastes in a safe manner. See definition of compatibility under Analytical Procedures. Method Used: In-house, see Section 4.6.2 II compatibility.

Republic conducts bench scale testing to develop waste management procedures once the type and concentration of contaminants present in the waste have been identified and measured. These tests determine whether or not the waste can be safely managed at Republic.

All water based liquid wastes destined for treatment and discharge at RES (PA) require a case by case examination for treatability effectiveness. Treatment effectiveness is generally proportional to reagent (bleach, carbon, lime, etc.) dosage. Concentration criteria are established after the treatability study is complete. Each waste stream is evaluated individually for treatability and acceptability. Hazardous waste liquids which are approved for treatment at RES (PA) will be submitted to the Department for approval under Module I application.

The treatment process must be demonstrated to produce an effluent which:

has been rendered non-characteristically hazardous (TCLP metals below limits)

is in compliance with effluent discharge permit conditions or effluent will be directed to an alternate off-site disposal facility

All bulk and containerized solid waste destined for fixation and stabilization treatment in RES (PA)'s containment building are subjected to a bench scale treatability analysis to evaluate treatment compatibility and acceptance. Hazardous solids, soils and sludges D004-D011, are mixed with lime, kiln, or cement dusts to stabilize the solids and reduce the leachability of heavy metals. The treated solids are subsequently analyzed for TCLP metals to confirm waste has been rendered non-hazardous. Residual solids requiring processing are tested for compatibility and treatment effectiveness and analyzed according to final off-site land disposal requirements. Hazardous solids approved for stabilization treatment and storage in the waste pile will be

submitted to the Department for approval under Module I application. Residual solids as specified in table 4-3 approved for treatment and storage in the waste pile will be submitted to the Department for approval under a Form U application.

The bench scale tests ensure the proper management of all wastes treated at the facility. The bench scale reactions provide symptoms with respect to any heat generation, any odor generation and other indicators which are important with respect to full scale treatment of the waste. They are also the reference point for comparison against incoming waste shipments.

The results of the basic screening procedures and treatability study are recorded on the Treatment Procedure Sheet (T.P.S.). The Treatment Procedure Sheet is ultimately utilized by the plant technician as a master menu, prescribing acceptable analysis and concentration ranges for the proper management of each specific waste.

Upon completion of the procedural requirements, the data is examined by the Technical Approval Manager. Based on the experience and judgment of the Approval Manager and/or Technical Director, the decision is made whether the waste can be safely and properly managed by Republic.

4.3.3 RECEIVING PROCEDURES

Each shipment of waste, upon arrival at the facility, is inspected, sampled and analyzed before initiation of any further action. This serves two purposes. First, it compares the waste characteristics with those determined in the pre-acceptance phase against those listed on the manifest or bill of lading. Second, it confirms the waste characteristics and acceptable ranges to ensure the facility safely and properly manages the waste as initially determined in the pre-acceptance phase. The analyses and acceptable ranges are established on the T.P.S.

When a waste shipment arrives at the facility, the Manifest and Bill of Lading are checked for completeness and correctness. At a minimum, the following information will be checked:

- Shipping document number
- The generator's name, address, EPA Identification Number
- The transporter's name and EPA Identification Number
- The hazardous waste management facility, address and EPA Identification Number
- The proper DOT shipping information and EPA waste numbers
- The quantity or volume of waste in the shipment
- The number and type of containers in the shipment (if received in containers)
- A signed, dated certification from the generator of the shipment's contents.

Republic will implement the following sampling methods to procure a representative sample:

Bulk tankers will be sampled using a Coliwasa sampler.
Containers will be sampled using a drum thief or Coliwasa sampler.
Bulk solids will be sampled using a trier or solid core sampler.

All bulk liquid tankers will be individually sampled and analyzed. All bulk solid shipments will be individually sampled and analyzed. For drum shipments, minimum of twenty percent (20%) of the containers for each specific lab code present will be sampled and analyzed upon delivery and before releasing the transporter. Container samples that are related to one generator and/or one process may be composited prior to analysis, providing the individual samples are compatible and similar in physical appearance. In the case where one of the composites do not match either the manifest or the initial sample fingerprint analysis all the drums in that category will be evaluated for correct composite selection if necessary. For wastes which will be chemically treated or consolidated at Republic, after the load has been accepted and the transporter has been released, but before further processing, all containers will be opened and visually screened for major discrepancies and tested for compatibility and process specifications.

Samples from incoming loads will be subjected to the basic screening procedures listed in 4.3.2. All samples removed from incoming shipments will be retained at the facility for a period of not less than seven (7) days.

4.3.3.1 DECISION EVALUATION PROCESS

The general logic utilized by the Plant Supervisor in deciding whether to accept or reject a particular waste load is depicted in Figure 4-3. The decision whether additional analyses are required for a particular waste is based on the following:

- Results of screening
- Results of pre-acceptance evaluation
- Knowledge of generator and/or waste generating process.

In the event the screening results indicate a waste does not agree with the pre-acceptance analytical results or Republic personnel have reason to suspect that the waste composition has changed, the generator will be immediately contacted and additional testing will be required. If the waste is considered Off Chemical (see 4.3.8), Republic will perform the appropriate re-characterization analysis for any additional parameters that may be necessary as specified in Figure 4-2. The characterization results will be evaluated to decide if the waste complies with those waste characteristics compatible with Republic's treatment processes and permit. Based on these results, Republic will accept or reject the waste shipment. A new module I application will be submitted and approved prior to treatment of a new hazardous waste stream or an off chemical hazardous waste.

4.3.4 WASTE MANAGEMENT PROCEDURES

Upon acceptance of the incoming waste shipment by the Shift Supervisor or Chemical Processor, the approval and unloading of the waste into the appropriate receiving tank or area is assigned by the Shift Supervisor or Production Manager.

The plant manager maintains a permanent record which lists the volume of waste received, the trailer number, time of arrival and time of unloading, the corresponding bill of lading or hazardous waste manifest, the Republic Environmental Systems (PA), Inc. lab code number, and the tank, waste pile or container storage area into which the waste was unloaded. When a waste is unloaded, a WAP sheet is created to document analytical results. The WAP sheet is generator, waste process type and lab code specific. A WAP sheet is generated for every individual load of waste accepted at the facility. This information is maintained onsite as a permanent record.

Bulk Liquid Handling

Treatment of liquid waste shipments, both hazardous and residual, off loaded into tanks is conducted by facility personnel on a batch basis under the direction of the shift supervisor. Each batch is identified by two (2) numbers: the bill of lading or manifest number and a plant batch number. Treatment of the batch is recorded on an individual batch sheet which designates each specific reagent chemical addition as a separate line item. In this way, every waste can be tracked completely through the entire treatment process, from acceptance to final effluent discharge.

Facility personnel use the step-by-step treatment procedure developed by laboratory approval chemists as a guideline. Plant Chemical Processors are responsible for scaling up the treatment from bench scale to production. The Chemical Processors sample a batch after every chemical addition to assure the treatment process is proceeding as planned. At these points the treatment procedure may be modified to increase reagent dosages or add additional chemicals to ensure complete and effective treatment to produce an acceptable effluent for discharge.

Prior to transferring the batch for subsequent processing, a sample must be taken and tested and the plant technician must sign the batch sheet. If the batch is out of specification, the plant technician terminates the treatment process and alerts the shift supervisor at this point. An extensive analysis and treatability study is conducted on the sample in the facility laboratory to determine the cause of the problem and develop an acceptable treatment method.

Drum Handling

All drums will be received and off loaded into the facility or loaded on another trailer destined to an alternate TSD facility. Every drum will be inspected for proper DOT packaging and labeling. If the integrity of the drum is suspect or if it is leaking, the drum will be immediately placed in an overpack or transferred to a proper DOT container. The manifest or bill of lading provided by the generator is examined and checked against the labeling on the drums.

The incoming drum shipment will be inspected for drum integrity and the manifest or bill of lading checked while the drums are in the incoming trailer or on the loading dock and a portion of the drums will be opened for sampling. Twenty percent (20%) of the drums will be opened for sampling. Twenty percent (20%) of the drums carrying the same lab approval code number will be sampled. At least one (1) drum under each lab approval code number will be sampled. The transporting vehicle will remain at the station while the samples are analyzed. The samples removed from the drum will be analyzed against the initial sample and profile provided by the generator. If everything is in order, and the load within specification, the shipment will be accepted.

In the event the screening results indicate a waste does not agree with the pre-acceptance analytical results or the shipping document, the generator will be immediately contacted and additional testing will be required. The characterization results will be evaluated to decide if the waste is compatible with Republic's permit and treatment and storage processes. Based on these results, Republic will accept or reject the waste shipment. A new Module I application will be submitted and approved prior to the treatment of a new hazardous waste stream or off chemical hazardous waste.

4.3.5 DRUM MANAGEMENT

Upon acceptance, the drums will be placed in their respective storage locations after the drums (which have been sampled) are closed and sealed. The drums are stored according to their characteristics, compatibility and hazard class. Incompatible materials shall be properly separated so there is no possibility of contact. All drums and containers will be managed in accordance with the Pennsylvania Solid Waste Regulations 25 PA Code § 265.(Q).

Drums containing residual wastes will be stored and managed in the designated hazardous waste storage and process areas. While in these permitted units, residual waste will be managed as a hazardous waste according to the specifications in this application. All the sampling analysis, storage and waste management protocol established for hazardous waste shall be strictly followed during the course of handling a residual waste.

The location of each drum will be recorded. The drums will be stored with a minimum of thirty (30) inches of aisle space between all clusters. This permits inspection of any drum from an aisle to ascertain the integrity of the drum and to detect any leakage during storage. If the inspector discovers a leaking drum, it will be immediately removed from the cluster and the contents transferred to a sound drum or the leaking drum will be overpacked. An inventory of onsite waste is constantly maintained in a written document which is kept onsite at all times.

Drums containing compatible wastes which are amenable to chemical treatment will be removed from storage and transferred to one of the process areas. All of the drums will be opened. A representative sample will be removed from each drum. The samples will be mixed with each other at the laboratory bench in accordance with the approved SOP for compatibility testing in

order to ensure that all of the waste in the drums will be compatible. The results of the compatibility testing will be recorded on a consolidation batch sheet (refer to Figure 4-4).

Following management approval, the liquid contents in the drums will be pumped into the designated reactor vessel (as specified in Figure 4-11) for chemical treatment or consolidated into a storage tank for off-site disposal. The waste will be handled and managed in accordance with the procedures specified in the treatment procedure sheet(s). At this point, the waste will be handled as a batch as described in the previous section on bulk liquid treatment.

Drums containing solids, semi solids and sludges may be emptied into a mixing vessel for the purpose of dissolution and resuspension into an aqueous matrix. The resultant liquefied mixture will be subsequently transferred to a reactor vessel for chemical and physical treatment, as described in the section on bulk liquid batch treatments.

Drums containing solid materials (sludges, solids, soils) which are similar to Republic's stabilized treatment sludge in chemical and physical characteristics and compatible with same, are transferred into the solids containment building to be managed and stored in the enclosed waste piles. The solid waste will be segregated according to its waste classification. Hazardous waste solids are emptied into hazardous section (unit) of the containment building for stabilization, treatment or storage for off-site disposal. Residual solids are emptied into the residual section (unit) of the containment building for fixation or consolidation/storage for off-site disposal. Residual solids will be managed as a hazardous waste while being processed in the containment building. All solid drums will be sampled and tested for compatibility in accordance with the approved SOP in the lab prior to consolidation into waste pile (refer to Figure 4-5). The results of the compatibility testing will be recorded on a consolidation batch sheet. The treatment procedure sheet will provide the proper handling and disposal procedures proposed based on the initial sample evaluation.

Drums containing materials destined for offsite disposal are accepted for storage. They are received in accordance with all the procedures specified in the Waste Analysis Plan. They will be tested to comply with Republic's receiving procedures as well as the offsite facility's requirements. Compatible liquids may be bulked onsite to facilitate tanker truck deliveries to an alternate TSD facility. Compatible solids (including debris) may be bulked and consolidated in the indoor drum process area, the containment building or in a bulk solid container for delivery to an alternate TSD facility. All proper compatibility testing is first performed and recorded.

Empty drums formerly containing acutely hazardous waste will be processed through a triple rinsing with ten percent (10%) of the container capacity to clean the drums prior to reclamation. Drums previously containing non-acutely hazardous waste or residual waste will be emptied to contain <1" of residue prior to off-site disposal or reclamation. The drums will be decontaminated in accordance with Pennsylvania Solid Waste Regulations for empty drums. The rinse waters and spent cleaning solutions will be transferred to reactor vessels for chemical and physical treatment as described in previous section on bulk liquid batch treatments.

4.3.6

BULK SOLID HANDLING

Solid wastes received in bulk (dump trucks, rolloffs, vactors, etc.) will be sampled and analyzed in accordance with the procedures specified in the WAP. Compatible solids in the form of sludges, soils and industrial process solids will be accepted for management and storage in the designated waste pile unit according to its hazardous or residual waste classification (see definition of compatible in Analytical Procedure section). Before placement of any waste into the containment building, Republic personnel assess the compatibility of the waste with the materials of construction of the storage unit and with wastes already stored therein, by virtue of the compatibility SOP and testing protocol and documentation. Any free liquids present will be decanted where possible or chemically fixated with lime, kiln dust or cat fines prior to addition to existing waste pile.

The waste piles will be managed in accordance with Pennsylvania Solid Waste Regulations Title 25.264 Subchapter L. Wastes will be managed according to their hazardous characteristics and constituents and applicability to the land disposal restrictions. Waste piles will be managed on a batch basis according to LDR treatment. The wastes accepted are primarily inert solids, soils and sludges that may require chemical fixation or stabilization treatment. The treatment process was developed to meet one or both of the following goals:

Elimination of Free Liquids - Free liquids or excessive moisture content which can not be decanted or pumped off are fixated in order to pass the paint filter test. This pretreatment renders the waste more amenable to further treatment operations or direct land disposal.

Toxicity Reduction - The process stabilizes wastes to effectively immobilize leachable hazardous constituents. The leachability of hazardous constituents specified in 40 CFR 268.41 (Table CCWE) as measured by the TCLP is reduced to meet the established treatment standards prior to land disposal.

4.3.6.1

HAZARDOUS SOLID WASTE MANAGEMENT

Hazardous solids from various sources are mixed and co-mingled for the purpose of treatment or storage for off-site disposal. Solids from Republic wastewater treatment operation may be mixed with bulk hazardous solids accepted from off-site generators as well as containerized solids. Wastes are treated on a batch basis as follows:

- A. Contaminated soils, sludges, and other solids which are characteristically hazardous for the presence of heavy metals (D004-D011) will be managed as an individual batch. Various sources of third party solids and plant filtercake may be commingled for the purpose of treatment. The maximum volume per batch treatment will be 50 yards. The waste will be treated in the waste pile or a specific container (Example: Rolloff) as follows:

The solids will be sampled, analyzed and tested for process compatibility and then emptied into the hazardous containment building unit.

An appropriate prescribed dosage of lime, kiln and/or cement dust and other propriety ingredients will be added and mixed with waste. Water or moisture will be added as necessary to provide a better reaction matrix.

The solids will be mixed to create a uniform, homogeneous treated mixture. The waste may be loaded into dump trailers at this point (depending on inventory and operational constraints) for staging, or staged in a waste pile in the containment building and allowed to cure.

Representative samples will be taken from six (6) distinct locations in the pile and/or dump trailers. The samples will be composited and subjected to the TCLP.

The sample will be extracted via the TCLP and the extraction fluids will be analyzed for the appropriate heavy metals (that for which was received) as established in 40 CFR 268.41 Table CCWE, as well as the off-site facility requirements.

Waste which have been treated to meet treatment standards and no longer exhibit hazardous characteristics will be landfilled as residual waste in a Subtitle D landfill.

Waste received which are also hazardous for one or more of the TC organic compounds (D018-D043) will be analyzed for the corresponding organic compound to verify it no longer exhibits that characteristic prior to disposal as non hazardous.

Any batch which does not meet the treatment standards will be subject to additional stabilization treatment at RES (PA) or will be sent offsite to a permitted hazardous waste facility for the treatment prior to land disposal.

- B. Contaminated soils, sludges and other solids which are listed hazardous wastes F006, F007, F008, F009, F010, F011, F012, and F019 will be managed as a separate batch and segregated from other characteristic waste.

Solids carrying the waste codes F006 through F019 will be analyzed to verify total and amenable cyanide levels meet their respective treatment standards (40 CFR Part 268.43) prior to stabilization treatment.

Waste will be stored, transferred and managed as a segregated batch. Listed waste staging for final off-site disposal will only occur in dump trailers or rollofs. Waste may be fixated if necessary to pass the paint filter test.

Treated residues will be analyzed utilizing the TCLP for compliance with the respective treatment standards as established in 40 CFR Part 268.41 prior to direct land disposal.

Waste not meeting LDR treatment standards will be sent offsite for further treatment prior to land disposal.

Characteristic hazardous waste may, at the discretion of the plant or operations manager, be mixed with batches of listed wastes. However, the resultant mixture will be managed as listed waste. The waste pile area and equipment used to manage the listed waste will be scraped and decontaminated and certified clean prior to the management of a characteristically hazardous waste.

- C. Contaminated soils, sludges and other solids which are characteristically hazardous for the TC organic compounds D018-D043 will be managed as a separate batch. These wastes may be accepted for storage and sent offsite as hazardous or commingled with other outgoing hazardous solids.

In addition, solids classified as characteristically hazardous waste D018 through D043 will be accepted for batch stabilization/fixation treatment utilizing activated carbon and cement to reduce the leachable levels of organic compounds and render non hazardous. Solids classified for these waste codes will be commingled for the purpose of treatment. The treatment process will be carried out as described in (A) above.

Treated residues will be staged, sampled and analyzed using the TCLP protocol.

Samples from wastes hazardous for volatile constituents will be prepared utilizing the TCLP zero headspace extraction and analyzed by gas chromatography (SW846 method 8021) at RES (PA)'s facility lab or an independent certified lab for the appropriate organic constituent(s).

Waste which is hazardous for semi volatile constituents will be sampled and analyzed by gas chromatography/mass spectrascopy (SW846 method 8270) at RES (PA)'s on-site laboratory or by an off-site certified lab.

Waste which has been treated to below characteristic levels for the respective organic constituents will be disposed of as residual waste at a subtitle D landfill.

- D. Contaminated soils, sludges, and other solids classified as any of the listed hazardous waste F, K, U and P numbers included on the Part A application will be accepted, staged, stored and treated in separate batches. Staging will only occur on dedicated dump trailers or rollofs. Acceptance will be contingent on the following factors.

It is a solid which has been shown to meet treatment standard for the applicable constituent(s) listed in 268.43 or if technology standard was treated in accordance with method(s) listed in 268.42.

It is a contaminated soil or debris and is subject to a nationwide capacity variance.

Waste does not contain HOC's > 1,000 ppm.

Wastes which meet treatment standards or are subject to a nationwide capacity variance will be accepted, stored and managed on a batch basis. Waste may be fixated if necessary to pass paint filter test or for general moisture control. Treated solids will be loaded onto dump trucks destined for land disposal as a RCRA hazardous waste.

4.3.6.2 RESIDUAL SOLID WASTE MANAGEMENT

- A. Residual soils, sludges and other solids, will be accepted for storage and/or treatment in the residual containment building. The categories of waste which are specified for bulk solid handling in the containment building are listed in Table 4-3. Solids accepted which are dry and pass the paint filter test will be stored in the non hazardous pile with other compatible residual wastes. Solids which do not pass the paint filter test or require fixation treatment will be processed with kiln dust and other similar dry fixating agents. The resultant solids will be sent offsite for disposal in a Subtitle D landfill. Analysis will be performed on a batch basis as required by the receiving landfill facility. Residual solids being disposed of at a Pennsylvania landfill will be sent under the appropriate form U application and approval. Residual solids, while in the containment buildings will be managed utilizing the same protocol as a hazardous waste until approved and released for off-site disposal as a residual waste.

4.3.7. BY-PRODUCT ANALYSIS

The wastewater treatment operation at Republic generates three (3) by-products which have no economic value. Republic will test these waste materials in accordance with Pennsylvania Solid Waste Regulations and specific parameters required by the offsite TSD facility. The major by-products generated are:

1. Liquid effluent from dewatering operation.
2. Residual treatment sludge/solids.
3. Hazardous treatment sludge/solids.

4.3.7.1 LIQUID EFFLUENT

The liquid effluent is generated by filtering chemically treated and/or polished batches of waste. The plant Chemical Processors evaluate each batch prior to transferring it to the final step, dewatering. A sample is removed from the treated batch tank for quality control. The sample is filtered on a bench scale (to simulate actual full-scale process) and the filtrate is evaluated for pH, odor, color and other pertinent parameters (TOC, nitrogen, heavy metals, etc.) against the prescribed treatment regimen.

The effluent is pumped to two (2) 17,000-gallon holding tanks, ET-1 and ET-2 for polishing treatment or to the biological treatment tanks. The plant Chemical Processor samples and analyzes the effluent in the effluent holding tanks for compliance with discharge permit parameters and to demonstrate effective treatment. Effluent which meets the effluent discharge parameters is transferred to the equalization tank to be prepared for final discharge. Treated effluent from the biological treatment system is also transferred to the equalization tank or effluent holding tanks and prepared for final discharge. The EQ tank, once full, is closed off, sampled and analyzed as a batch prior to actual discharge. Effluent volume is measured by an in-line flow meter.

Effluent is tested for the following parameters:

- Odor
- Color
- pH
- Suspended Solids
- Total Organic Carbon
- Total Nitrogen
- Heavy Metals

Two (2) automatic samplers are located in the manhole on facility property. One locked sampler is the property of the HTMA. The HTMA sampler collects a daily effluent composite which is subsequently analyzed by the Authority. The other auto-sampler, operated by Republic collects a daily composite. The daily composite is stored in amber glass jars and refrigerated. A weekly composite is prepared from the refrigerated daily composites. The composites are analyzed by Republic for the following parameters:

DAILY COMPOSITE

pH
TOC
COD
Total Ammonia
Total Nitrates
Phenol
Total Susp. Solids
Total Nitrogen
Heavy Metal Analysis
Volatile Organic Analysis

WEEKLY COMPOSITE

Selected Semi-Volatile Analysis
Volatile Organic Analysis

BI-WEEKLY COMPOSITE

Selected VOA
Pesticides
Acrolein
Acrylonitrile

Republic generates two (2) primary types of waste solids from the treatment operations: a hazardous and a non-hazardous (residual) solid. There are several categories (batch operations) of hazardous solids which have been identified and characterized in section 4.3.6. Each sludge/solid is segregated into a designated area and is managed as a indoor waste pile; if staged in the containment building.

Each batch of residual solids generated from the treatment operations is segregated, stored and analyzed for pH, ignitability, reactivity, TCLP metals, and a volatile screen prior to being sent offsite and disposed of as non-hazardous material. Six (6) core samples are pulled from each batch and composited for analysis for TCLP metals. An individual grab sample will be collected for volatile organic analysis from each batch. The analytical results are kept at the facility on file with the plant manager.

Each batch of solids generated from the treatment of characteristically hazardous waste D018-D043 will also be analyzed (TCLP) for the corresponding organic compound(s) prior to non-hazardous disposal. This will be performed in addition to the standard residual process sludge analysis discussed above.

Note: RES (PA)'s residual process utilizes waste acids, caustic, oxidizers, sulfides and heavy metals salts to treat other wastes. These inorganic wastes have characteristics which allow them to be beneficially reused to treat other waste. It is for this reason that each batch of residual sludge generated is tested for TCLP metals.

Other residual solid waste accepted from offsite generators and may be stored in a waste pile separate from Republic's treatment sludge. These materials are accepted in accordance with the WAP receiving procedures and are subsequently sent offsite for disposal in compliance with the receiving landfill's requirements as specified in Section 4.3.6.2.

Each batch of solids generated from the hazardous treatment operation will be staged, segregated, sampled, and analyzed to confirm compliance with the applicable treatment standards. Characteristic hazardous solids (D001-43) will be kept in a segregated batch (separate from listed waste) and treated to meet the corresponding treatment standards to render them residual (non hazardous). Residual solid wastes generated will be disposed in an appropriate residual landfill. Refer to section 4.3.6 (Bulk Solid Handling) for details on the management of solids prior to land disposal. Hazardous filtercake solids will be commingled with third party bulk and containerized solids according to the batch categories established. The solids generated are managed on a batch basis as a waste pile and treated to meet the appropriate standards and staged for analytical confirmation prior to offsite disposal. Wastes which have technology based treatment standards established shall be treated by the technology listed prior to land disposal. Waste which have concentration-based standards established shall be analyzed to confirm compliance with applicable standards as established in 40 CFR 268.41 CCWE and 268.43 CCW.

prior to land disposal. The analytical results are kept at the facility on file with the plant and are maintained as part of the operating record.

4.3.7.3

RECOVERED OIL FOR RECYCLING

Wastes received in bulk and containerized form with significant oil phases are analyzed for flash point, total halogens and PCBs prior to processing. Oil phases and recovered oil from the chemical cracking of emulsions and tank bottoms are stored in the designated oil storage tanks. Representative samples are taken from the tank using a Coliwasa sampler for quality control analysis. The samples are analyzed for the following parameters:

- Ignitability
- % Water
- % Organic chlorine
- PCB analysis
- Settleable solids
- Any other tests required by offsite TSD facility.

The oil is sent offsite to a permitted oil recycling plant, fuel blending operation or commercial incineration. Bottom solids, sludges and water phases are treated through the bulk liquid treatment process.

4.3.8

FREQUENCY OF CHARACTERIZATION

There are two purposes for conducting characterization confirmation analyses of samples removed from incoming waste streams. The most significant reason is to detect the presence of compounds or characteristics not found to be present in the analyses of the generator's original sample. The second reason is to measure the concentration of compounds known to be present, so that the contractual agreement with the generator can be modified accordingly.

A representative sample from an incoming shipment will be taken using the appropriate sampling techniques. Analysis of this sample by the laboratory technician will be in accordance with the initial characterization analysis.

Republic will repeat/reconfirm the original waste stream analysis on the following schedule:

- a. All active streams will be re characterized at a minimum of once per year.
- b. Any waste stream which has been received off-chemical will immediately be initiated into the re-characterization program.

Off specification and off chemical are defined as follows:

1. Off Specification - There is a variation in some of the waste characteristics. This is generally a small deviation, where a few minor tests can determine whether or not the waste can be

handled in the method as originally determined. (e.g. pH variance, color change, increase in solids, etc.)

2. Off Chemical - There is a major variation in the chemical constituent composition of the wastes in comparison with the original analysis (Example: waste flashes when it was profiled as non-ignitable). This is a major deviation which warrants a complete re-analysis fingerprint and treatability methodology.

4.3.9. ADDITIONAL SAMPLING AND ANALYSIS PROCEDURES IN COMPLIANCE WITH 40 CFR PART 268 LAND DISPOSAL RESTRICTIONS

I. In accordance with 40 CFR Part 268; the following additional material handling, notification and analytical procedures are implemented. All hazardous waste shipments subject to the land disposal restriction program (40 CFR Part 268) will be accompanied by the proper notification/certification form as required.

1. Solvent Waste F001-F005 CFR Part 269.30

All F001-F005 solvent waste (not including wastewaters) determined to be prohibited waste will require treatment in accordance with EPA standards prior to land disposal. A land disposal restriction notification will accompany each load as specified in 40 CFR 268.7.

Contaminated F001-F005 solvent sludge, solid, or soil which is to be disposed of at a land disposal facility, must be sampled and analyzed in accordance with SW-846 to determine the concentrations of those restricted constituents listed in 40 CFR Part 268.41 Table CCWE and 268.43. Waste not meeting treatment standards will be sent offsite for incineration or other treatment prior to land disposal. Should the presence of significant concentrations of F001-F005 waste constituents be determined through GC analysis for which there has been no prior basis for this identification, the generator will be notified in order to ensure proper classification in compliance with the Land Disposal Restrictions.

TREATMENT STANDARDS

Wastewaters accepted for treatment will be analyzed for solvent constituents and treated using activated carbon, oxidation, or biological treatment. Residues generated from the treatment process will be sampled and analyzed to ensure the treatment standards set forth in 268.43 are achieved.

2. California List Wastes 40 CFR 268.32

All Land Disposal Restricted Wastes as identified in 40 CFR 268.12 and referred to as the "California List" wastes are subject to additional sampling and analyses prior to disposal at an offsite land disposal facility.

All California List waste accepted for storage only will be sampled and analyzed according to the WAP and sent offsite to a permitted treatment facility with the proper land disposal restriction notification.

Hazardous waste liquids having a pH of less than or equal to 2.0, containing free cyanides, PCB's > 50 ppm or metals as specified in 40 CFR Part 268.32 (g) (3) are restricted from Land Disposal.

Waste streams in compliance with 40 CFR Part 268.32 and any other applicable parts are shipped to an offsite facility for disposal. Waste not meeting the Paint Filter test will be treated to meet the respective treatment standard.

Non waste water HOC waste containing > 1,000 ppm HOCs will be identified as a California List waste based on analysis and/or generator process information and will be disposed of in accordance with the corresponding treatment standard, by incineration in an industrial furnace or commercial incinerator.

3. **Land Disposal Restrictions for Listed Hazardous Waste**

Hazardous waste identified as restricted from land disposal in the first third, effective August 8, 1988, the second third effective June 8, 1989, and the third effective May 8, 1990 will be managed according to the final standards issued.

Refer to section 4.3.6 on bulk solid handling and analysis prior to land disposal.

D001

High TOC non waste waters shall be sent offsite for fuel blending or incineration. Waste shall be analyzed for flashpoint and TOC to determine applicable treatment standard.

D001 (Low TOC, WW) and D002

Shall be treated through use of physical and chemical methods to deactivate waste and remove respective characteristics. Solids generated will be tested for pH and ignitability.

D003 (Cyanides and Sulfides)

Shall be treated through chemical oxidation for deactivation and remove the characteristic of reactivity. Solids generated will be screened for free sulfide and free cyanide levels.

D004 through D011

Shall be treated through chemical precipitation and stabilization to meet treatment standards established in 40 CFR Part 268.41. Each batch a sludge/solids generated will be sampled and analyzed to confirm TCLP metal levels are below establish standards. Wastes formerly characteristically hazardous which have been treated to meet treatment standards no longer exhibit hazardous characteristic shall be disposed in Subtitle D landfill.

The notification form certifying waste was treated to performance standards shall be sent to the EPA Region III administrator.

Restricted hazardous wastes subject to a nationwide capacity variance will be land disposed directly at a secure hazardous waste landfill with the proper notification as specified in 40 CFR Part 268.7(a)(3).

Listed hazardous wastes which have the technology based treatment standards shall be treated by the established method(s) prior to land disposal. Listed hazardous wastes which have concentration based standards shall be treated by chemical and physical methods to meet the levels established in 40 CFR Part 268.41 and 268.43. Each respective batch of hazardous waste shall be analyzed for the parameters specific to each EPA waste number prior to land disposal.

Table CCW constituents shall be destroyed or removed in the chemical treatment process prior to fixation/stabilization. Table CCWE constituents shall be stabilized and analyzed using the TCLP.

Hazardous wastes which are prohibited and subject to treatment will be treated and analyzed according to treatment standards issued.

4.4 QUALITY ASSURANCE PLAN

The following Quality Assurance Plan shall be instituted to ensure that waste analysis data is precise, accurate and representative. Republic personnel are trained to perform their jobs safely and efficiently. Details of the complete training program are covered in Section 6 of this Volume. Laboratory personnel follow a vigorous training program which is supervised and coordinated by the Laboratory Director.

The training program is broken down into five main segments:

- Wet Testing Methods
- Heavy Metal Analysis by Atomic Absorption Spectrophotometry
- Organic Analysis by Gas Chromatography
- Orientation into Plant Operations and Capabilities
- State and Federal Hazardous Waste Regulations

All laboratory technical personnel are required to have a college degree in chemical, environmental or other related fields.

In order to ensure that sampling is being performed in accordance with the appropriate procedures, sampling procedures will be included in the training program and Republic management will supervise sampling at least monthly with each employee performing this task. All plant operations personnel will be required to be trained in the approved SOPs for sampling, plant treatment operations and compatibility testing.

To assure that analysis by the onsite laboratory is accurate, a comprehensive quality control and quality assurance program is followed. The program includes instrument maintenance and calibration, as well as the testing of standards, blanks, duplicates and spikes on a weekly basis. Republic will also obtain copies of state and/or federal laboratory certification and will at least annually test P.E. samples as a check on their accuracy.

All waste analysis data will be maintained onsite for at least twenty (20) years from the date of waste acceptance. It will be company policy to keep all records, analyses and documents permanently onsite either on computer disk or "hard" copy. Original documents will be moved off site due to space limitations after five (5) years. The waste analysis records will be reviewed weekly to assure they are legible and properly maintained.

All analytical test procedures are performed and conducted in accordance with the following reference manuals:

1. Test Methods for Evaluating Solid Waste,
U.S. EPA, SW-846 Third Edition (1986)
2. Methods for Chemical Analysis of Water and Wastes,
U.S. EPA, EPA-600/4-79-020
3. Standard Methods for the Examination of Water & Wastewater, 15th Edition (1980)
4. 40 CFR Part 136: Guidelines Establishing Test Procedures
For the Analysis of Pollutants.

4.5 LABORATORY DESCRIPTION

Republic's laboratory is equipped to provide gas chromatography (GC), atomic absorption (AA), heat and organic chlorine analysis, Inductively Coupled Plasma (ICP), Gas Chromatography/Mass Spectroscopy (GC/MS) and all miscellaneous equipment and glassware to perform all the testing required for waste and product analysis. This includes the ability to test for all RCRA hazardous characteristics.

Equipment:

Leeman Lab ICP (or equivalent)
JY 46B ICP
Fisher pH meter (or equivalent)
Dohrman Total Nitrogen Analyzer (or equivalent)
Perkin Elmer AA with graphite furnace (or equivalent)
Tracor GC with headspace analyzer
Tracor G.C. (or equivalent)
Finnigan GC/MS
Tracor G.C. with purge and trap set up (or equivalent)
Finnigan GC/MS with purge and trap
Parr Bomb Calorimeter (or equivalent)
Dohrman Total Organic Carbon Analysis (or equivalent)
Seta and Pensky Marten's flash point testers (or equivalent)
Muffle furnace oven (or equivalent)
Hitachi UV Spectrophotometer (or equivalent)
Standard convection oven (or equivalent)
Centrifuge for B. S. & W. analysis (or equivalent)
Hot plates, stir plates, water bath
Glassware and distillation apparatus
T.C.L.P. Leachate extraction equipment

4.6 SUMMARY OF QA/QC PROGRAM

4.6.1 In order to insure scientifically valid and legally defensible results, the Republic laboratory uses the following procedures:

1. Implementation of a comprehensive training program to insure the laboratory staff's expertise.
2. A Republic Laboratory Methods Manual is issued to insure correct and consistent methodology.
3. Method blanks are run with 5% of all samples to insure the lack of any contamination.
4. Calibration blanks and standards are run with 10% of all samples to check the standard curve and/or the standardization of reagents.
5. Duplicate analysis of samples are performed on 5% of all samples or more frequently if specified, to insure reproducibility.
6. Standard spikes are run on 5% of all samples analyzed to insure the accuracy of our results or certified standards are analyzed daily to check the reliability.

7. U.S. EPA quality assurance samples are run monthly to check the reliability and accuracy of our analysis.
8. Shewhart charts are produced from the certified lab control samples, duplicates and spike data in order to confirm our quality control and observe any trends in our sample preparation and analysis techniques.
9. A QA/QC officer is appointed to implement and oversee the QA/QC program along with summarizing the data.
10. The QA/QC Officer is responsible for insuring proper documentation (of results and stepwise data used to calculate results). He is also responsible for reviewing all results and insuring their validity.
11. All instruments and equipment have documentation indicating when they are given periodic maintenance and service as needed to insure proper operation. Instruction manuals provided by the manufacturer are maintained in the laboratory.
12. The AA, ICP, DC-80 and DN-1000 have complete service warranty contracts from the manufacturer, which covers service and maintenance including parts and labor.

4.6.2 ANALYTICAL PROCEDURES

All analytical test procedures are performed and conducted in accordance with:

1. Test Methods for Evaluating Solid Waste, U.S. EPA, SW-846, Third Edition (1986)
OR
2. Methods for Chemical Analysis of Water and Wastes, U.S. EPA, EPA-600/4-79-020 (EPA-600)
OR
3. Standard Methods for the Examination of Water and Wastewater - 15th Edition (1980) (A.P.H.A.)
OR
4. Handbook for Analytical Quality Control in Water and Wastewater Laboratories, EPA-600/4-79-019 March 1979

pH

Method 9040

(SW-846)

Total Solids

Method 160.3(E.P.A.-600)

Total Volatile

Method 160.4(E.P.A.-600)

Total Dissolved Solids @ 180° C
Method 160.1(E.P.A.-600)
Total Suspended Solids
Method
160.2(E.P.A.-600)
Total Organic Carbon
Method 415.1(E.P.A.-600)
SW-846 Method 9060A
Compatibility
No Method Available:
- see attached

Specific Gravity
Method 213 E
(Alpha 15th Edition)
Reactivity*
7.3.3.2(SW-846)
7.3.4.2

*Also use Method 9010 and 9030 for cyanide and sulfide. Also, a portion of all samples removed from incoming shipments is subject to a reactivity test through the entire pH range. - see attached.

Btu/Chlorides
Sw-846 Method 5050 & 9253
Chemical Oxygen Demand
Method 410.1 (E.P.A.-600)

Nitrogen

Distillation (E.P.A.-600)
Ammonia nitrogen
& Titration Method
(NH3-N)
350.2

Organic Kjeldahl

Nitrogen (OK-N)
Determined on
distillation flask residue from 350.2,
above, using Method 351.3
(E.P.A.-600)

GC

SW-846 Method
8000A
Metals by ICP
SW-846 Method 6010A

I. Reactivity

- 1) Is it stable under ambient temperatures and pressure? Will polymerization occur?
- 2) Does it react violently when in contact with water?
- 3) When mixed with water, does it generate toxic gases, fumes or vapors?
- 4) Is it a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gasses, fumes or vapors?
- 5) Is it capable of exploding at ambient temperatures and pressures?
- 6) Is it capable of exploding when subjected to a strong initiating source or if heated under confinement?

II. Compatibility

- A. Between two (2) wastes or residues.
- B. Between container, tank or storage containment material and waste residues.

When mixed (Heated = Thermal Compatibility)

- 1) Does it exhibit any of the characteristics of reactivity?
- 2) Does it generate any significant amount of heat raising temperature of mixture to >150F?
- 3) Does any type of chemical reaction occur which may create adverse conditions?
- 4) Are any toxic fumes, odors or gases evolved?
- 5) Are sparks emitted or any other potential characteristics of ignitability observed?

Heavy Metals

Total Metals - on as received samples. Digestion procedures - Method 3040, 3050 (SW-846). Also microwave digestion procedure to be utilized.

Dissolved Metals - on sample filtrate after filtering through 0.45u membrane filter.

Digestion procedures - same as above

NOTE: Digestion procedure will be selected based on the actual sample to be tested.

Instrumentation - Perkin Elmer, Model AA Spectrophotometer or Leeman Labs ICP. Acetylene/air flame-direct aspiration. Argon flame-direct aspiration for ICP. Grafitte furnace analysis - AA.

Cadmium Method 7130/6010
 (SW-846) 3010, 3020, 3030, 3040,
 3050

Copper Method 220.1/6010
 (EPA-600) 3010, 3020, 3050
Nickel Method 7520/6010
 (SW-846) 3010, 3020,
 3050

Silver Method 7760/6010
 (SW-846) 3020, 3030,
 3040, 3050

Zinc Method 289.1/6010
 (EPA-600) 3010,
 3020, 3050

Barium Method 7041/6010
 (SW-846) 3010, 3020,
 3030, 3040, 3050

Chromium Method 7190/6010
 (SW-846) 3010, 3020,
 3030, 3040, 3050

Molybdenum Method 246.1/6010
 (EPA-SW-846) 3010, 3020

| | |
|----------------------------|---------------------|
| Antimony | Method |
| 7041/6010/7040 | |
| (SW-846) 3010, 3050 | |
| Arsenic | Method 7060/6010 |
| | (SW-846) 3030, 3050 |
| Lead | Method |
| 7421/6010/7420 | |
| (SW-846) 3010, 3020, 3030, | |
| 3040, 3050 | |
| Selenium | Method 7740/6010 |
| | (SW-846) 3030, 3050 |

Cold vapor technique:

| | |
|---------|------------------|
| Mercury | Method 7470/7471 |
| | (SW-846) |

Hexavalent Chrome by diphenylcarbazide color generation.

Method 7196
(SW-846)

Organochlorine Pesticides and PCBs

| | |
|------------|--------------------|
| Aldrin | E.P.A. Method 8081 |
| -BHC | E.P.A. Method 8081 |
| -BHC | E.P.A. Method 8081 |
| -BHC | E.P.A. Method 8081 |
| -BHC | E.P.A. Method 8081 |
| 4,4' - DDD | E.P.A. Method 8081 |
| 4,4' - DDE | E.P.A. Method 8081 |
| 4,4' - DDT | E.P.A. Method 8081 |
| Chlordane | E.P.A. Method 8081 |

Dieldrin

E.P.A. Method 8081

Endosulfan I

E.P.A. Method 8081

Endosulfan II

E.P.A. Method 8081

Endosulfan sulfate

E.P.A. Method 8081

Endrin

E.P.A. Method 8081

Endrin Aldehyde

E.P.A. Method 8081

Heptachlor

E.P.A. Method 8081

Heptachlor epoxide

E.P.A. Method 8081

Methoxychlor

Toxaphene

E.P.A. Method 8081

PCB - 1016

E.P.A. Method 8081

PCB - 1221

E.P.A. Method 8081

PCB - 1232

E.P.A. Method 8081

PCB - 1242

E.P.A. Method 8081

PCB - 1248

E.P.A. Method 8081

PCB - 1254

E.P.A. Method 8081

PCB - 1260

E.P.A. Method 8081

Nitrate

By Szechrome color Deve.

BTU

By Bomb Calorimetry

% Organic Halogen

By Bomb Calorimetry

ASTM

D808-81

Chloride

Method 407A

(APHA)

Ignitability
SW846 - 1010/1020
Sulfates
Method 375.4
(E.P.A.-600)
Sulfide
Method 376.1 (E.P.A.-600)/S
W846-9030

T.C.L.P. Toxic Herbicides and Pesticides (D012-D017)

Chlordane
Method 8080
(SW-846)
Endrin
Method 8080 (SW-846)
Lindane
Method 8080
(SW-846)
Toxaphene
Method 8080
(SW-846)
Total Cyanides
Method 9010
(SW-846)

Oil & Grease - Depending on the nature of samples and based on our experience and expertise.
Gravimetric, separatory funnel extraction on liquid samples Method 413.1 (E.P.A.-600)
Extraction Method for sludge samples Method 503 D (A.P.H.A.)

Phosphorous, Total - Acid hydrolysis, H₂S₄/HN₃ Method 424 B-11 (A.P.H.A.) Color development, SnC₁₂ method Method 424 E (A.P.H.A.)

Phenolics - 4 - Aminoantipyrine method - direct photometric SW-846 Method 9065

% Acidity/Alkalinity - An appropriate amount of sample is weighed into a 250 ml beaker (nearest 0.01 g), 100 ml D.I. H₂O and magnet bar are added. pH electrode is placed into solution and stirrer started.

Sample is then titrated with:

1. 1 N NaOH to pH 8.3, if waste sample is acidic.
2. 1 N HCl to pH 8.3, if waste sample is alkaline.

Calculation:

$$\% \text{ Acid} = \frac{\text{In}^v \text{ NaOH} \times 1.00 \times \text{meq wt. acid} \times 100}{\text{wt. sample (in grams)}}$$

$$\% \text{ Alkaline} = \frac{\text{IN}^v \text{ HCL} \times 1.00 \text{ meq wt. acid} \times 100}{\text{wt. sample (in grams)}}$$

Percent (%) is calculated to component known to be present in greatest quantity.

Gas Chromatographic Method

The company utilizes three (3) Gas Chromatographic analysis methods that are accurate for screening sales samples, incoming waste samples, and for the evaluation of treatment effectiveness: Purge and trap, Headspace analysis, direct injection for organic matrices.

A list of non-priority pollutant compounds screened for is presented, listed in order of elution:

| | |
|-----------------------|------------------|
| Methanol | |
| Ethanol | |
| Acetone | |
| Allyl Alcohol | |
| Methyl Ethyl Ketone | (SW |
| | 846 Method 3810) |
| Ethyl Acetate | |
| Tetrahydrofuran | |
| N-Butanol | |
| 2-pentanone | |
| 4-methyl-2-pentanone | |
| N-Amyl Alcohol | |
| N-butyl Acetate | |
| M,P Xylenes | (E.P.A. 8021) |
| O-Xylene | (E.P.A. 8021) |
| N, N-Dimethyl Aniline | |

A list of the priority pollutant compounds screened for is presented, listed in order of elution:

| | |
|--------------------|---------------|
| Acrolein | (E.P.A. 8021) |
| 1,1-dichloroethene | (E.P.A. 8021) |
| Methylene chloride | (E.P.A. 8021) |

| | | |
|---------------|---------------------------|---------------|
| | trans-1,2-dichloroethene | (E.P.A. 8021) |
| | 1,1 dichloroethane | (E.P.A. 8021) |
| | Chloroform | (E.P.A. 8021) |
| | 1,1,1-trichloroethane | (E.P.A. 8021) |
| | 1,2-dichloroethane | (E.P.A. 8021) |
| | Benzene | (E.P.A. 8021) |
| | Carbon Tetrachloride | (E.P.A. 8021) |
| | 1,2-dichloropropane | (E.P.A. 8021) |
| | Trichloroethylene | (E.P.A. 8021) |
| | Bromodichloro methane | (E.P.A. 8021) |
| | cis-1,3-dichloropropene | (E.P.A. 8021) |
| | trans-1,3-dichloropropene | (E.P.A. 8021) |
| | Toluene | (E.P.A. 8021) |
| | 1,1,2-trichloroethane | (E.P.A. 8021) |
| | Chlorodibromomethane | (E.P.A. 8021) |
| | Perchloroethylene | (E.P.A. 8021) |
| Chlorobenzene | | (E.P.A. 8021) |
| Ethyl benzene | | (E.P.A. 8021) |
| | 1,1,1,2 tetrachlorethane | (E.P.A. 8021) |
| | m-dichlorobenzene | (E.P.A. 8021) |
| | p-dichlorobenzene | (E.P.A. 8021) |
| | o-dichlorobenzene | (E.P.A. 8021) |

Hexachloroethane
(E.P.A. 8021)

Isophorene
(E.P.A. 8021)

1,2,4-trichlorobenzene
(E.P.A. 8021)

Hexachloro 01,3-butadiene
(E.P.A. 8021)

Hexachlorocyclopentadiene
(E.P.A. 8021)

The detection limits for each test method are in the 1 to 10 ppb range.

4.7 LAB TRAINING PROGRAM

The training process is a four (4) to five (5) week program which may cover much of the information listed below as it applies to the responsibilities of that individual.

WEEK ONE (estimated schedule)

Day One:

- Review and make copy of lab analysis procedures.
- Take Waste Analysis Plan home to read.
- Take PPC home to read.
- Health Plan, W-2 Form.
- Safety Policy, Company Policy and Rules.
- Lab tour, familiarization with equipment and testing.

Day Two:

- Review W.A.P. tests and procedures.
- Review plant processing and treatment techniques.
- Learn flash point with Pensky Martin and Seta.
- Learn TS, TDS, TSS, TVS.
- Run TOC on truck samples.
- Review W.A.P. sheets and general paperwork.

Day Three:

- Perform following tests:
 - COD analysis
 - NH3 and cyanide distillation filtrations.
- Review location of necessities
- chemicals, glassware, etc.
- Review use of MSA Samplair tester and detector tubes and when it is used.
- Review use of pH meters and titration stations.
- Review use of balances and drying ovens.

Day Four:

- Perform following tests:
 - *TKN and acid digestion
 - *Phenol distillation and UV spectrophotometer use
 - *Review preparation of stock and standard solutions
- Review various log books and their respective uses.
 - Review T.C. Leachate analysis.
 - Perform oil/grease liquid/liquid separation and soxhlet extraction.

Day Five:

- Review research materials - standard methods: ASTM, EPA test methods.
- Review G.C. methods, programs and operation.
- Review A.A. methods, programs and operation.

WEEK TWO (estimated schedule)

Day Six:

- Review plant processing of wastes from start to finish.
- Plant treatments and how to handle them.
- Plant tour and explanation of operations.

Day Seven:

- Review treatment procedures and their applications.
- Review sales sample workups, treatabilities and analyses.
- BTU Bomb Operation.
- Monthly monitoring wells and the respective tests.

Day Eight:

- Lab QA/QC plan.
- Calculating and recording data.

Day Nine:

- A.A. workups, operation and manuals.
- Customer files, data and lab code books
- Review metal groups and acid digestion.

Day Ten:

- G.C. workups, operation and manuals.
- Complete review of all tests performed.
- Complete review of 2-week training period.
- Determine areas of strengths and weaknesses.

WEEK THREE (estimated schedule)

- Review plant procedures.
- Review treatability studies, waste specifics.

- Work with G.C. operation.
- One day working in plant.

WEEK FOUR (estimated schedule)

- Review specific treatments and applications.
- Work with A.A. operation.
- One day working in plant.

WEEK FIVE (estimated schedule)

- Review PA DER Hazardous Waste Regulations.
- Review RCRA Regulations.
- Review facility permit, operating procedures.

I:\wpdata\logon\respawap.re1



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
1875 New Hope Street
Norristown, PA 19401
215 631-2420



March 4, 1983

Mr. Edwin Griffiths
Environmental Manager
Scott Paper Company
1500 East Second Street
Eddystone, PA 19013

Re: EPA Identification No. PAD002274975
Facility Name: Scott Paper Company
1500 East Second Street
Eddystone, PA 19013

Dear Mr. Griffiths:

This letter constitutes a formal request for Part B of your application for Hazardous Waste Management Facility Permit under the Hazardous Waste Management Regulations, 25 PA Code Chapter 75, Subchapter D, for the facility referred above. This request is made under the authority of Section 75.265(z)(6) of the regulations. You should refer to the hazardous waste management regulations that appeared in the Pennsylvania Bulletin dated September 4, 1982, which was recently mailed to you for the requirements of the Part B application. Your Part B application must be submitted no later than September 1, 1983. If there is information that is being claimed as confidential, indicate this according to the requirements of Section 75.265(z)(16).

If your facility is not a TSD (treatment, storage or disposal site), or if you stopped functioning as a TSD facility after November 19, 1980, or if you qualify under the Permit by Rule provision of the regulations, it will be necessary for you to contact one of our field offices, and to arrange for an inspection to confirm this. Our field offices and the areas covered are the Bethlehem Office, phone number 861-2070, covering Berks, Lehigh and Northampton Counties; and the Norristown Office, phone number 631-2420, covering Philadelphia, Bucks, Chester, Delaware and Montgomery Counties.

If you functioned as a TSD after November 19, 1980, it will be necessary for you to submit four copies of a closure plan to Mr. Bruce Beitler of this office.

Enclosed are reference checklists for your Part B application that are to be used to insure your application contains the minimum information required. These checklists are to be used to assist you in your Part B application and our subsequent review, although the checklists are not a substitute for reviewing and addressing the hazardous waste regulations themselves. Because you may be anticipating additional facilities at your location, we have included checklists for every type of facility covered by the Department requirements. Please use only those checklists that apply to the types of facilities for which you are making application.

Your Part B application will be reviewed for a hazardous waste management TSD Permit by both the U. S. Environmental Protection Agency and the Department of Environmental Resources until the Commonwealth of Pennsylvania receives Phase II Interim Authorization under the RCRA Program to solely administer a permitting program.

You should submit the Part B application to both agencies for their concurrent review. This would require that the hazardous waste requirements under Pennsylvania regulations as well as the hazardous waste management requirements under the Federal program would have to be addressed.

When completed, please transmit your application and five copies (or seven copies if there is an incineration facility) to our office, and if you have any questions or desire to have a pre-application conference, please contact Mr. Lawrence H. Lunsk, Solid Waste Facilities Supervisor, at the letterhead address, or by calling 215 631-2420.

Very truly yours,

WAYNE L. LYNN
Regional Solid Waste Manager

Re P770

ENCLOSURE